

November 18, 2013

Key Findings:

- A number of local government bodies are responsible in part for the collection of sanitary sewage, wastewater, and in some instances, storm water.
- There are substantial maintenance needs associated with the built infrastructure of some of these systems, particularly those owned by the City of Springfield. Recent City rate increases, although a necessary and beneficial piece of a long-term solution, are inadequate to cover the future costs for bringing sewer infrastructure to an appropriate level of repair.
- Delayed repairs and maintenance will likely lead to greater long-term costs. Many probable costs associated with the aging infrastructure are unknown, as the study required to develop this cost information is itself costly.
- The CEC recommends that ownership, operation, and maintenance of the City of Springfield's sewer system be transferred to the Springfield Metro Sanitary District (SMSD) through a planned, phased transfer of segments that are newly built, are brought up to an established standard of repair, or are transferred with accompanying designated revenues needed to reach such a standard.
- The CEC recognizes that this is an interim step in pursuit of a larger regional sewer plan, and therefore further recommends that a group be convened immediately to pursue implementation of this negotiated transfer and to develop a long-term plan for ameliorating the negative effects on public and private property of the deteriorating sewer system. The CEC recommends that this group consider creating a storm water utility and take substantive steps to address revenue shortfalls for regional sewer infrastructure.

The Citizens' Efficiency Commission
Phone: 217.535.3110
Fax: 217.535.3111
CitizensEfficiency@gmail.com
<http://www.sscrpc.com>



Citizens' Efficiency Commission Recommendation: Undertake Phased Transfer of Springfield Sewers to SMSD

Introduction

This report represents a formal recommendation by the Citizens' Efficiency Commission (CEC). Members of the CEC and its research staff have verified information contained in this report. The Commission expresses its hope that relevant local leaders will review the recommendation and take strides toward its implementation.

In light of the research presented below, the CEC recommends that ownership, operation, and maintenance of the City of Springfield's sewer system be transferred to the Springfield Metro Sanitary District (SMSD) through a planned, phased transfer of segments that are newly built, are brought up to an established standard of repair, or are transferred with accompanying designated revenues needed to reach such a standard.

The CEC recognizes that this is an interim step in pursuit of a larger regional sewer plan, and therefore further recommends that a group be convened immediately to pursue implementation of this negotiated transfer and to develop a long-term plan for ameliorating negative effects on public and private property of the deteriorating sewer system. The CEC recommends that this group consider creating a storm water utility and take substantive steps to address revenue shortfalls for regional sewer infrastructure.

The Commission is prepared to provide assistance to the greatest extent possible for the review and implementation of these recommendations. The CEC may be interested in further efficiency considerations that develop based on this advisory report.

Background Information

During the spring of 2013, the City of Springfield began a discussion of sewer fee increases and a sales tax increase to fund infrastructure needs. At this time, the suggestion developed that the City review a consolidation of sewer functions with the SMSD. This conversation added valuable information to the CEC's preliminary review of functions of various units of governments. The CEC learned that the City of Springfield's Public Works Sewer Division handles the vast majority of sanitary sewage collection in the City, while the SMSD handles some collection and all treatment for the City. The CEC found that there may be benefit to examining opportunities for cooperation or collaboration between these two entities because of the surface-level similarity of their tasks, and also found that it might be beneficial to include in its review the numerous other local government bodies that deal with sanitary and storm sewer collection and treatment.



Accordingly, in May of 2013, the CEC's Public Works Committee presented and received full Commission support for the following finding:

Numerous local infrastructure systems exist in Sangamon County in support of sanitary and storm water sewage collection and treatment. The largest actors involved in managing and maintaining sewer systems in the region include the Springfield Metro Sanitary District and the City of Springfield's Public Works Department. The Public Works Committee has identified that opportunities for more efficient maintenance may exist if the systems could be handled by a single entity. The committee requests the full support of the CEC to research opportunities and barriers to increasing regional coordination related to funding and management of sewer systems.

Efficiency Research Questions

As it pursued its research related to this finding, the CEC asked questions such as:

- What similarities exist between the functions and services provided through the local entities handling storm and sanitary sewers?
- Are there opportunities for increased collaboration between entities that maintain and manage sewer systems components?

Overview of Existing Services

Springfield Metro Sanitary District

The SMSD is the government body responsible for sanitary sewage treatment for the City of Springfield and a number of surrounding municipalities, as well as the unincorporated areas within its boundaries. These municipalities include Chatham, Grandview, Jerome, Leland Grove, Rochester, Sherman and Southern View. The District serves over 150,000 residents with an estimated general fund budget of just over \$22 million dollars, in addition to a number of capital and special revenue funds. It is governed by an independent board appointed by the Sangamon County Board.

The SMSD owns and operates the Spring Creek Wastewater Treatment Plant on North 8th Street and the Sugar Creek Wastewater Treatment Plant, near the intersections of I-55 and I-72. The Spring Creek Plant underwent a four-phase, 5 year, \$125 million upgrade to a new treatment plant east of 8th street in recent years.¹ This plant represents state-of-the-art equipment, and its innovative aeration system is one of very few of its kind in North America.² These plan upgrades also provided the SMSD the ability to collect and treat substantially more waste, with significant additional potential for expansion before reaching capacity. The SMSD also expects to construct a new Sugar Creek Plant in the coming years in order to bring this facility up to standards, to be finished in 2017 or 2018. These upgrades were funded by a series of nine annual rate increases, the sixth of which, a 6% increase, went into effect in May of 2013.³ In addition to these two facilities, the SMSD owns and maintains about 90 miles of large interceptor sewer in and around the City of Springfield. The SMSD owns and maintains 30-40 additional miles of collector sewer in the municipalities it serves. As of 2013,

¹ SMSD. "Springfield Metro Sanitary District's new Spring Creek WWTP project benefits from managing project information electronically." Powerpoint available at: cmaanet.org/files/shared/Web_Based_Collaborative.ppt.

² Personal communication from Fred Nika, P.E., District Engineer for SMSD (June 10, 2013).

³ Stroisch, Deana. (June 30, 2013). "First of sewer rate increases takes effect Monday." Available at: <http://www.sj-r.com/archive/x1806113845/First-of-sewer-rate-hikes-takes-effect-Monday>.



the SMSD has approximately 52 full time employees, 3 part time employees, and 6 board members, most of whom receive a stipend.

The SMSD has a NPDES permit for sewer discharge. Related to its permit and the City's combined sewer overflow concerns described below, the SMSD is working with the City of Springfield on a long-term control plan to develop sewer upgrades such that the annual overflow volume can be reduced from approximately 60 occurrences to approximately 40 occurrences.⁴ These changes are underway, and have been assisted by the upgrades to both SMSD and City infrastructure.

Springfield Public Works Department- Sewer Division

The City of Springfield owns and maintains approximately 355 miles of sanitary sewers, 200 miles of storm sewers, and 140 miles of combined sanitary/storm sewers. Its sewers collect wastewater from individual properties and eventually transport it to the SMSD treatment facilities. The Sewer Division includes 26-28 full time employees, responsible for the repair and maintenance of this system. Much of the city of Springfield's sewer system is very dated. In particular, the central city and downtown area's sewer date back to the late 1800s in some locations. This aging infrastructure requires increasing attention for repair and maintenance, cave-ins, and other problems. As a result, the City of Springfield faces considerable pressure related to infrastructure improvement and repair needs. In 1949, the City had a study conducted on known needs for collector, interceptor, and lateral sewers. This study identified \$97 million of needed improvements in current dollars, which the City has since that time been working to implement. In recent years, EPA requirements related to alleviating combined sewer overflow issues have also become an urgent pressure for the City.⁵

As a result of these needs, in summer of 2013, the City of Springfield passed an ordinance increasing sewer rates by 5% annually for each of the next ten years. These increases are estimated to cost the average user about \$5.92 per month by the end of the ten year timeframe.⁶ The rates are intended to cover the costs of \$55 million in needed sewer repairs, financed by EPA low-interest loans with a total cost of \$60 million. The increase accompanied a half-percentage point increase in City sales tax to assist in street, sidewalk, and storm sewer infrastructure repairs. The sales tax increase is intended to repay an \$86.6 million bond issue for a ten-year infrastructure improvement plan.⁷ However, the expectation for these revenues is that they are intended to repair the most urgent sewer problems and bring the City into compliance with the EPA's administrative order, rather than to comprehensively solve all of the sewer repairs and maintenance needs.⁸ Combined sewer

⁴CEC Interview with Mark Mahoney, John Higginbotham, and Mike Walner, City of Springfield Public Works (November 14, 2013).

⁵ United States Environmental Protection Agency. "Modification of Administrative Order Issues on September 21, 2013. " Available at: <http://www.springfield.il.us/Public%20Works/sewer/documents/USEPA%20Administrative%20Order%20-%20effective%20021413.pdf>.

⁶Stroisch, Deana. (April 17, 2013). "Mayor: Tax, sewer hike 'major step forward.'" Available at: http://www.sj-r.com/breaking/x1545202424/Mayor-Tax-sewer-hikes-major-step-forward?zc_p=1; Stroisch, Deana. (June 30, 2013). "First of sewer rate increases takes effect Monday." Available at: <http://www.sj-r.com/archive/x1806113845/First-of-sewer-rate-hikes-takes-effect-Monday>.

⁷ Landis, Tim (April 4, 2013). "Chamber endorses tax, rate increases for infrastructure." Available at: <http://www.sj-r.com/breaking/x766891701/Chamber-endorses-tax-rate-increases-for-infrastructure#ixzz2dl89VoFb>.

⁸ Rushton, Bruce. (March 14, 2013). "Fixing things: The city eyes a tax hike for public works." Available at: <http://www.illinoistimes.com/Springfield/article-11142-fixing-things.html>; CEC Interview with Mark Mahoney, Director, Springfield Public Works (August 26, 2013); City of Springfield (2013). "FY2014 Sewer

overflow problems are only a portion of the City's concerns with aging infrastructure. Moreover, even if the City fully addresses combined sewer line capacity, private ownership of lateral lines leading from residential properties to combined sewer trunks that are municipally owned currently prevents the City from fully addresses system problems.⁹

One difficulty that exacerbates these concerns is that the City does not have a complete working awareness of where repairs are needed. Because of the extent of Springfield's sewer system, the complete system has never been televised or rated in a comprehensive quality study. In order to truly assess needs, such would be required. This study, for a city of Springfield's size, would likely cost \$4-5 million.¹⁰ Without this very sizeable investment, it is difficult to develop a full understanding of the costs for infrastructure repairs currently needed. However, it is likely that the sewer repairs covered in the recent rate and tax increases, many of which are in the older downtown area, do not cover many long-term repair needs.

It is important to note that, although the City also handles storm water sewer lines, these lines are largely considered a separate system. Storm sewers (unless part of the combined system, which is a unique case) currently receive little attention except in a situation of failure or collapse. While rehabilitation of the two types of lines has similar costs, maintenance of storm sewers is currently less of an expense to the City than sanitary sewers, and accounts for less than 20% of the City's repair budget, or an estimated \$350,000 annually.¹¹ Ultimately, the cost of maintaining and repairing this system will add to the City's burdens. However, these lines are distinct from sanitary sewer considerations, and ownership and management of storm sewers is not a function that overlaps with the SMSD's existing functions. As such, the CEC has only preliminarily explored storm water and its impact in the current recommendation.

Sewer Rates

The average household uses approximately 8 units of water per month. Based on this usage, the Table 1 below compares the cost to the average user for a one-month bill. A complete comparison of sewer rates for SMSD-served areas is provided in Table 2, below.

Table 1: Average Household Monthly Bill by Rate Area (800CF monthly flow)- current rates

Village/Rate Zone	Average Monthly Bill
Chatham	\$51.90
Grandview	\$43.05
Jerome	\$43.05
Leland Grove	\$43.05
Rochester	\$57.97
Sherman	\$57.97
Springfield (varies by meter size)	\$29.85 (5/8" meter) - \$34.73(1" meter)
Southern View	\$43.05
Unincorporated County	\$43.41

Facilities Plan." Available at: <http://www.springfield.il.us/Public%20Works/sewer/documents/FY2014%20City%20of%20Springfield%20Facilities%20Plan%20072313.pdf>

⁹ CEC Interview with Mark Mahoney, John Higginbotham, and Mike Walner, City of Springfield Public Works (November 14, 2013).

¹⁰ CEC interview with Gregg Humphrey, Executive Director, SMSD, and Mark Mahoney, Director, Springfield Public Works (April 15, 2013).

¹¹ CEC Interview with Mark Mahoney, John Higginbotham, and Mike Walner, City of Springfield Public Works (November 14, 2013).

Table 2: Sewer Rates Comparison

Community					SMSD- FY2014 Charges				Local Community- FY2014 Charges		
	2010 Census Pop.	Estimated SMSD Pop.	Ownership & Operation of Sewer System	Sewer Fee Collection by:	Applicable District Rate Schedule	District Monthly Service Charge	District Monthly User Charge (per 100 CF)	District Annual Collection Charge	Minimum ¹² charges (first unit of volume or flat rate)	Volumetric Usage charges (per 100 CF)	Monthly User Charge (per 100 CF)
Chatham	11,500	10,824	Chatham	Chatham	1c	\$ 4.97	\$ 2.07	\$ 0.25	\$ 18.20	\$ 4.08	
Grandview	1,441	1,537	SMSD	Grandview	1a	\$ 9.93	\$ 4.14	\$ 0.50	N / A	N / A	
Jerome	1,656	2,200	SMSD	Jerome	1a	\$ 9.93	\$ 4.14	\$ 0.50	N / A	N / A	
Leland Grove	1,503	1,592	SMSD	Springfield	1a	\$ 9.93	\$ 4.14	\$ 0.50	N / A	N / A	
Rochester	3,689	3,442	Rochester	Rochester	1c	\$ 4.97	\$ 2.07	\$ 0.25	\$ 4.25	\$ 5.16	
Sherman	4,148	3,827	Sherman	Sherman	1c	\$ 4.97	\$ 2.07	\$ 0.25	\$ 18.03	\$ 5.50	
Springfield	116,250	116,482	Springfield	Springfield						First 300 CF	Over 300 CF
Springfield - 5/8" meter					1b	\$ 4.97	\$ 2.07	\$ 0.25	\$ 3.26	\$ 0.37	\$ 0.79
Springfield - 3/4" meter					1b	\$ 4.97	\$ 2.07	\$ 0.25	\$ 4.88	\$ 0.37	\$ 0.79
Springfield - 1" meter					1b	\$ 4.97	\$ 2.07	\$ 0.25	\$ 8.14	\$ 0.37	\$ 0.79
Springfield - 1 1/4" meter					1b	\$ 4.97	\$ 2.07	\$ 0.25	\$ 13.02	\$ 0.37	\$ 0.79
Springfield - 1 1/2" meter					1b	\$ 4.97	\$ 2.07	\$ 0.25	\$ 16.28	\$ 0.37	\$ 0.79
Springfield - 2" meter					1b	\$ 4.97	\$ 2.07	\$ 0.25	\$ 26.04	\$ 0.37	\$ 0.79
Springfield - 3" meter					1b	\$ 4.97	\$ 2.07	\$ 0.25	\$ 48.83	\$ 0.37	\$ 0.79
Springfield - 4" meter					1b	\$ 4.97	\$ 2.07	\$ 0.25	\$ 81.38	\$ 0.37	\$ 0.79
Springfield - 6" & > meter					1b	\$ 4.97	\$ 2.07	\$ 0.25	\$ 162.75	\$ 0.37	\$ 0.79
Southern View	1,642	1,695	SMSD	Springfield	1a	\$ 9.93	\$ 4.14	\$ 0.50	N / A	N / A	
IL State Fairgrounds		-	IL DoA	Springfield	1b	\$ 4.97	\$ 2.07	\$ 0.25			
Unincorporated Springfield			SMSD	SMSD	1d	\$ 12.61	N / A	\$ 0.50	N / A	N / A	
Unincorporated Sangamon County *		3,500	SMSD	SMSD	1d	\$ 43.41	N / A	\$ 0.50	N / A	N / A	

¹² Initial unit size varies by jurisdiction. The City of Springfield's rate increase schedule is included as Appendix A.

Preliminary Discussion of Efficiency and Effectiveness Concerns

This overview of existing services highlights numerous critical issues with the region's sewer systems. The first concern is the revenue shortfalls resulting from many years of forgone rate increases in the City of Springfield. The current administration and council acknowledge that there are major infrastructure needs that cannot be met, even with recent rate increases.¹³ These needs result from past policy decisions to direct revenues to alternative expenditure items, in contrast to sewer maintenance and repair. Even if needs were fully known, given current cost information, the CEC expects that the level of revenue generation required to alleviate repair needs would not immediately be economically feasible for the community.

The aging and deteriorating sewer system is of particular importance because of its potential to impact citizens. As time passes, the aging sewer system will continue to deteriorate without aggressive on-going maintenance and repair. As the system deteriorates, damage occurs to public and private property. Flooding and sewer backup have historically exemplified some of the negative results of aging sewer infrastructure in the City of Springfield.¹⁴

Aging infrastructure is an issue in many areas of the nation, and local entities have explored numerous options related to funding on-going maintenance and upkeep. For example, the City indicates that a one-hundred year maintenance cycle for the sewers that designates 1% of the total system for upgrades per year could be of benefit.¹⁵ However, before reaching the point where such on-going maintenance plans can be considered, the City system requires substantial revenues for upgrades and improvement.

Although there may be an undue burden on the current officials and residents of the City of Springfield as the result of prior generations' policy decisions, this does not eliminate the need for a solution. In fact, the current situation heightens the need to prevent the physical and financial difficulties associated with the sewer system from worsening. As time passes, the financial burdens associated with the aging sewer infrastructure are unlikely to diminish, due to increased inflation in materials and labor costs. Additionally, revenues related to the sewer system are now being designated toward immediate repair needs, rather than on-going maintenance. When maintenance is delayed as infrastructure ages, it ultimately leads to increased repair costs. For example, failure to re-line a sewer in a moderate state of disrepair can lead to the far more costly issue of sewer collapse and line replacement. Accordingly, the CEC realizes that efficiency efforts must consider both current and future expenditures.

In order to have the revenues needed to bring its system up to an acceptable level of repair and then conduct on-going maintenance on a regular, scheduled basis, major increases in revenue would be required. The City has a number of options for pursuing such increases, but implementing these changes would be very challenging. For new infrastructure, life cycle costing with designated revenues from new development may be valuable. Tying rates to inflation is also potentially beneficial, as the value of constant dollars of revenue declines in comparison to rising costs.

¹³ CEC Interview with Mark Mahoney, Director, Springfield Public Works (August 26, 2013).

¹⁴ Poole, Deana (September 20, 2010). "Residents quiz officials about sewer backups." *The State Journal Register*. Available at: <http://www.sj-r.com/top-stories/x995830231/Residents-quiz-officials-about-sewer-backups>.

¹⁵ CEC Interview with Mark Mahoney, John Higginbotham, and Mike Walner, City of Springfield Public Works (November 14, 2013).

Finally, expanding the discussion outward, the CEC notes that there are municipal systems in addition to the one owned and maintained by the City of Springfield that may need further assessment. Other municipalities that are tributary to the SMSD's system should not be left out of the analysis. For example, the CEC is aware that the SMSD is currently in unofficial conversations with the Village of Rochester about its pump station and system agreements.¹⁶ However, due to the pressing and immediate needs of the City of Springfield, the expansive nature of its infrastructure system, and its comparatively low rates, the CEC primarily addressed the City's system in its current review.

Best Practices

Generally, speaking, the CEC suggests that best practices in sewer system management include on-going system maintenance to prevent greater repair needs. As an example, sewer pipes can be lined in order to minimize cracking damage and prevent cave-ins. The SMSD is currently in the process of performing this lining on the portions of the regional system under its jurisdiction. In response to leaks in the City of Leland Grove, for instance, SMSD has lined its system there using a plastic sealant to prevent further deterioration.¹⁷

Historical Peer Example

As an example of a regional effort to confront similar problems to those discussed above and to engage in maintenance and repair efforts, the City of Peoria, Illinois, and the Greater Peoria Sanitary District (GPSD) have been engaged throughout the last decade in conversations related to collaboration on a comprehensive sewer system overhaul plan. In 2001, the City of Peoria began the process of cleaning, televising, assessing, and rehabilitating its sewer system.¹⁸ This process was largely spurred by pressures from the EPA related to its combined sewer issues, similar to those faced by the City of Springfield.

During this process, the City of Peoria acknowledged extensive maintenance needs on its separated sewer system, which it did not have adequate revenues to address due to its EPA-driven combined sewer priorities. The City further recognized that a failure to address sanitary sewer issues would ultimately lead to a more expensive dilemma as repair costs increased across time.¹⁹ The City developed an arrangement to transfer residential sewer connections for separate sanitary sewer lines to the GPSD after assessing and rehabilitating them as part of a long-term overhaul plan. This process is still underway, and included significant investments in study and repair of sewers. Revenues for rehabilitated or new lines are transferred to the GPSD with the ownership of the lines, and the GPSD then becomes responsible for long-term maintenance. About 30% of Peoria's separated lines will be transferred under this long-term control plan.

There are substantial similarities between the City of Peoria's sewer system and that of the City of Springfield. Peoria's system required \$50 million in upgrades, and the City of Springfield's public works department expects similar costs to Springfield on top of the current rate increases.²⁰ There are also some differences between the two systems which the

¹⁶ Personal communication from Gregg Humphrey, Director, SMSD (November 14, 2013).

¹⁷ Personal communication from Gregg Humphrey, Executive Director, SMSD (October 16, 2013).

¹⁸ Personal communication from Tim Sumner, Crawford, Murphy, & Tilly, Inc. (October 16, 2013).

¹⁹ Personal communication from Eric Hanson, Crawford, Murphy, & Tilly, Inc. (October 17, 2013).

²⁰ Personal communication from Mark Mahoney and John Higginbotham, City of Springfield Public Works (October 29, 2013).



CEC finds noteworthy.²¹ Springfield does not maintain its own National Pollutant Discharge Elimination System permit (NPDES) as the City of Peoria did. Moreover, in Peoria, the GPSD already did billing and collection for the City before the system transfer, which is not currently the case. These factors do not have large impact on the discussion about the SMSD and City increasing cooperation, but are nevertheless important consideration for any on-going arrangement.

Alternatives

Several options are available on a region-wide basis related to the on-going maintenance, repair, and administration of sewer systems. These alternatives include:

Alternative 1—*Maintain the status quo.*

This alternative would retain the current structure and functionality of both the City Public Works Sewer Division and the SMSD. While it is not unrealistic to continue under the existing administrative structure, the CEC notes that the City of Springfield will likely have long-term revenue needs that exceed the political will to increase rates historically having been displayed by the City's officials. There are substantial maintenance needs associated with the built infrastructure of the City's system, some known and some unknown. The recent rate increases passed by the City, although a necessary and beneficial piece of a long-term solution, are largely thought to be inadequate to cover the future costs for bringing the City's entire sewer infrastructure to an appropriate level of repair, and instead address only immediate needs. While the CEC did not conduct a thorough analysis of the City's operational costs, generally speaking, the City's current revenue levels as compared to its costs do not allow for large remediation projects for the failing portions of its sewer system.

Without a greater effort to bring the system up to this level, aging sewer systems will lead to increased long-term costs for the City. As indicated above, continuing to delay in approaching solutions to the aging infrastructure issues will ultimately lead to increased repair costs. Moreover, repair and maintenance costs will continue to rise with material and labor cost inflation, making these efforts more expensive in the future. Finally, new developments in and around the City, which currently are not considered a priority in the existing system of scarce resources, will likely not receive the maintenance attention that would prevent greater future costs, as they are part of a larger system with greater immediate needs.

Alternative 2—*Acquire revenues needed to repair City Sewers.*

The simplest option for addressing the failing sewer system in the City of Springfield and the associated increases in long-term costs would be to raise additional revenues for the City to fund the necessary assessment and rehabilitation of its system. The City could explore property tax reallocation, rate increases, and bonding mechanisms to ensure that these revenues could be acquired. Setting aside a designated funding source for sewer maintenance and repair is essential to ensuring that substantial problems with the system are addressed. However, the CEC finds it unlikely that this alternative can or will be successfully undertaken. As evident in the recent struggles related to more minimal sewer rate increases, this option would require an expansive increase in revenues that is seemingly unsupportable under current political and economic conditions.

²¹ Personal communication from Mark Mahoney and John Higginbotham, City of Springfield Public Works (October 29, 2013).

Alternative 3—Transfer all City Sewers to SMSD.

This alternative was the initial starting point of the CEC's discussion because of surface-level similarities in the SMSD and municipalities' sanitary sewer functions and because the SMSD does not face the revenue shortfalls currently confronting the City. This alternative has the potential to improve the simplicity of sewer system administration, and over the long term to lead to more consistent rates across jurisdictions. A transfer would also offer the benefits of removing responsibility for revenue increases from the City of Springfield's officials. As the SMSD currently conducts routine maintenance and repair on its system, its methods of operation would benefit the entire system.

During the CEC's research, however, it found that this option does not appear to be feasible with the sewer systems in their current state. The SMSD indicated to the CEC in discussions that it could not accept the City's sewer system without a dedicated and identified revenue source to upgrade and repair the system to a minimum standard level. Without more knowledge of the actual cost of these repairs, it is unlikely that such a transfer could occur.

The SMSD would also require some revenues to increase its operational capacity in the event that it took ownership of the expansive collection system currently held by the City. While an intergovernmental agreement, a tiered taxing structure, or increased fees could provide revenues for repair, maintenance, and operations, the financial capacity and knowledge of existing costs necessary to carry out such a transfer are not in place. In essence, the same concerns associated with alternative 2, above, preclude this alternative from being feasible.

The CEC also briefly considered in converse of this alternative, that is, transferring SMSD sewers to the City of Springfield. However, this alternative is not currently possible because the SMSD's jurisdictional boundaries extend beyond those of the City of Springfield. Moreover, the City cannot handle sanitary sewer outflow without an NPDES permit. Therefore, such a transfer is not feasible and would also eliminate many of the benefits of the transfer described above.

Alternative 4—Transfer City Sewers to SMSD on a planned, but phased basis, as portions of the sewer system are initially built or are brought up to a minimum standard of repair.

In light of the limited feasibility of the more comprehensive alternatives listed above, the CEC also explored interim or partial measures working toward a solution to aging sewer infrastructure problems. Alternative 4, gradually transferring sewer lines to SMSD, would provide the streamlining benefits of administration and rate consistency described in Alternative 3, above, but would occur on a more manageable basis.

Under this alternative, newly developed collection segments, or current segments that are deemed to meet minimum standards, would accrue to the SMSD, thereby alleviating the maintenance attention needs on the part of the City. In order to avoid a piecemeal approach that is likely unfeasible from an engineering standpoint,²² these transfers would need to be planned from the outset and occur on a phased basis by segment. While it is beyond the CEC's expertise to fully capture how this might occur, there appear to be practicable options for a gradual transfer of larger segments. For example, many areas within the City are tributary to one of the District's pump stations. These areas could be accurately mapped and investigated for flows and conditions. Lines that are tributary to a single pump station could then be considered as a combined segment or sub-district for

²² Personal communication from Jim Moll, PE (November 14, 2013).

transfer purposes.²³ This CEC urges that under this alternative, the entities involved establish an agreed-upon plan for phased transfers. This would ensure that these lines would not fall into a state of disrepair because of the many urgent needs for repair that would likely take priority over their on-going routine maintenance and repair.

Although it is only an interim solution, this alternative offers the benefit of preventing greater future costs that could develop as a result of jurisdictional choices not to prioritize routine preventative maintenance. With fewer pressing repair needs on its current collection system and greater historically-demonstrated political flexibility, the SMSD has more potential than the City to maintain adequate revenue streams to address system maintenance needs. In the immediate future, this alternative could increase cooperation among the two entities and prevent any further delays in needed maintenance. In the distant future, this alternative could ultimately lead to a single sewer system in the entire metro area covered by the SMSD, potentially increasing administrative efficiency and simplicity, and allowing for oversight by a board with attention specifically dedicated to sanitary sewer functions.

The CEC acknowledges that it seems counterintuitive to take revenues associated with stronger lines out of the pool of resources with which the City can address the needs of its failing system. The CEC also notes, however, that revenues associated with new developments' sewer lines are minimal in relation to the overall needs in the City.²⁴ Currently, when a portion of the City's system is brought onto the SMSD system, the process for revenue transfer varies based upon the type of sewer line or segment.²⁵ For residential connections, rates are transitioned to the applicable SMSD out-of-city schedule, and the associated revenues are designated to the SMSD. For some larger trunk lines that have been transferred in recent years, the SMSD has absorbed maintenance costs as no sewer collection rate is assessed. These agreements are negotiated on a transfer-by-transfer basis. A system for gradual rate transition and revenue transferring could be developed to allow for revenue sharing appropriate to all jurisdictions' needs. A phase-in of rate increases could also be considered to ease the transition for residents.

Again, in and of itself, without increases in rates, this solution is not expected to fully address all sewer needs. Moreover, the CEC does not anticipate substantial operational savings as a result of the phased transfer, but instead expects that this transfer could result in reduced costs for on-going repairs through intentional management of system maintenance.

Alternative 5—Undertake further exploration of a shared regional approach for sewer maintenance and repair.

Beyond the interim solution offered in Alternative 4, the CEC recognizes that further options for collaboratively generating needed revenues and reducing operational costs may exist. It is likely that a long-term solution to infrastructure needs will require revenue-sharing between the City and the SMSD in order to alleviate the overwhelming shortfall in City resources. Although the CEC cannot foresee what form such a solution might take, local jurisdictions could, under this alternative, begin seriously to consider and address plans for assessing and rehabilitating the City's sewer system. It is important to designate revenues for sewer

²³ Personal communication from Gregg Humphrey, Executive Director, SMSD (November 14, 2013).

²⁴ For example, the City would collect approximately an additional \$12,000 annually in sewer use fees for a new subdivision of 100 average households. These revenues, particularly if an appropriate portion is dedicated to line cleaning and maintenance, do not have great potential to impact the City's substantial revenue needs. Personal communication from Gregg Humphrey, Executive Director, SMSD (October 16, 2013).

²⁵ Personal communication from Gregg Humphrey, Executive Director, SMSD (October 16, 2013).



maintenance and repair, potentially through a policy to set aside increases in property tax revenues from new developments for this purpose. Further consideration of smaller municipalities' systems beyond what the CEC has currently envisioned would also be of benefit in this collaborative review.

Alternative 5 also allows for further consideration of storm water beyond the brief discussion in the current recommendation. As storm water sewers are largely a separate system from sanitary sewers and represent their own unique utility, the two systems should both receive individual review and consideration in relation to the structure and operations of the two entities currently responsible for sewer systems. The CEC also notes that some jurisdictions in the nation have created storm water utilities with the unique purpose of addressing storm water systems.

Recommendations

In light of the research presented below, the CEC recommends that ownership, operation, and maintenance of the City of Springfield's sewer system be transferred to the Springfield Metro Sanitary District (SMSD) through a planned, phased transfer of segments that are newly built, are brought up to an established standard of repair, or are transferred with accompanying designated revenues needed to reach such a standard.

The CEC recognizes that this is an interim step in pursuit of a larger regional sewer plan, and therefore further recommends that a group be convened immediately to pursue implementation of this negotiated transfer and to develop a long-term plan for ameliorating negative effects on public and private property of the deteriorating sewer system. The CEC recommends that this group consider creating a storm water utility and take substantive steps to address revenue shortfalls for regional sewer infrastructure.

The benefits of implementing the recommendation detailed above include:

- Containment of current revenue shortfalls through routine maintenance and repair of quality portions of the system;
- Potential for reduced long-term repair costs resulting ongoing maintenance;
- Additional collaboration in developing a solutions for revenue shortfalls;
- Potential for increased long-term consistency in rates;
- Potential for reduced long-term confusion in administrative structures; and
- Increased capability to generate economies of scale through improved region-wide planning and implementation.

While the CEC acknowledges that this recommendation above will require an increase in revenues, it notes that this increase is necessary in pursuit of long-term cost efficiency. Under current circumstances, the CEC feels that saving taxpayer dollars in the future requires a current level of spending that is unsupportable with existing revenue streams.

Steps toward Implementation

In order to implement this recommendation, the CEC recommends that the following course of action would be beneficial:

- The City and SMSD should establish a working group to begin addressing alternatives for long-term assessment and rehabilitation of sewers.



- Regional sanitary sewer entities should work to establish a minimum repair standard for sewer system lines.
- The City of Springfield should work to televise its sewer lines and gain as complete an understanding of the system's existing status as possible.
- As planned, phased segments are deemed to meet minimum standards, or as new development occurs, the City should transfer these portions of the system to the SMSD for on-going ownership, maintenance, and repair.
- A formula should be considered for gradual rate transition and revenue transferring, which would be triggered by the transfer of the lines to the SMSD.
- Entities involved in sewer system management in the region should consider additional revenue sources and develop a long-term plan for addressing needs.
- Further consideration should be given to storm water management in the region as a part of this on-going review.

The CEC offers its support for these implementation efforts. If the CEC can provide any further assistance in facilitating efforts toward cooperation, it would be pleased to do so.

Again, the CEC indicates that the present recommendations and their implementation are only interim components of a solution to the pressing problem of aging regional infrastructure. Since current investment is likely to reduce long-term costs, the CEC urges local governments to avoid further delays in addressing these concerns. Additionally, the CEC notes that the present recommendation primarily addressed only those major resource shortfalls identified by the City of Springfield, but that other municipalities may have similar problems with aging infrastructure. A regional review of the physical and financial conditions of smaller municipalities would also be of benefit.

As is frequently the case in the CEC's work, some research issues related to, but beyond the scope of, its current review seem to merit additional exploration. In this case, reuse of the water from the sanitary sewer treatment plants merits additional consideration. The City of Springfield has historically experienced water volume concerns in drought situations. The combined treatment plants produce an average of 15-20 million gallons of water per day, and even in a drought situation, the Sugar Creek Plant alone can reliably be expected to produce 3-5 million gallons per day.²⁶ With some investment in capital equipment for further filtration and disinfection, this water could safely be buffered, stored, and pumped to Lake Springfield to increase water levels. Water management plan components like this one should also form a part of the region's considerations as it approaches the research above related to its sanitary and storm water sewer systems.

Respectfully submitted,

Hon. Karen Hasara, Chair
on behalf of the
Citizens' Efficiency Commission
for Sangamon County

²⁶ Personal communication from Gregg Humphrey, Executive Director, SMSD (October 16, 2013).

Appendix A: City of Springfield currently-scheduled rate increases
Source: FY2014 City of Springfield Facilities Plan

SEWER FUND RATE INCREASE

5% Annual Increase

	Meter Charges										
	Current	July 1st 2013	July 1st 2014	July 1st 2015	July 1st 2016	July 1st 2017	July 1st 2018	July 1st 2019	July 1st 2020	July 1st 2021	July 1st 2022
5/8" Meter	\$3.10	\$3.26	\$3.42	\$3.59	\$3.77	\$3.96	\$4.15	\$4.36	\$4.58	\$4.81	\$5.05
3/4" Meter	\$4.65	\$4.88	\$5.13	\$5.38	\$5.65	\$5.93	\$6.23	\$6.54	\$6.87	\$7.21	\$7.57
1" Meter	\$7.75	\$8.14	\$8.54	\$8.97	\$9.42	\$9.89	\$10.39	\$10.91	\$11.45	\$12.02	\$12.62
1-1/4" Meter	\$12.40	\$13.02	\$13.67	\$14.35	\$15.07	\$15.83	\$16.62	\$17.45	\$18.32	\$19.24	\$20.20
1-1/2" Meter	\$15.50	\$16.28	\$17.09	\$17.94	\$18.84	\$19.78	\$20.77	\$21.81	\$22.90	\$24.05	\$25.25
2" Meter	\$24.80	\$26.04	\$27.34	\$28.71	\$30.14	\$31.65	\$33.23	\$34.90	\$36.64	\$38.47	\$40.40
3" Meter	\$46.50	\$48.83	\$51.27	\$53.83	\$56.52	\$59.35	\$62.31	\$65.43	\$68.70	\$72.14	\$75.74
4" Meter	\$77.50	\$81.38	\$85.44	\$89.72	\$94.20	\$98.91	\$103.86	\$109.05	\$114.50	\$120.23	\$126.24
6" Meter	\$155.00	\$162.75	\$170.89	\$179.43	\$188.40	\$197.82	\$207.71	\$218.10	\$229.01	\$240.46	\$252.48
8" Meter	\$155.00	\$162.75	\$170.89	\$179.43	\$188.40	\$197.82	\$207.71	\$218.10	\$229.01	\$240.46	\$252.48
10" Meter	\$155.00	\$162.75	\$170.89	\$179.43	\$188.40	\$197.82	\$207.71	\$218.10	\$229.01	\$240.46	\$252.48
Consumption Charges											
First 3 Units	\$0.35	\$0.37	\$0.39	\$0.41	\$0.43	\$0.45	\$0.47	\$0.49	\$0.52	\$0.54	\$0.57
Over 3 Units	\$0.75	\$0.79	\$0.83	\$0.87	\$0.91	\$0.96	\$1.01	\$1.06	\$1.11	\$1.16	\$1.22